

WHAT IS CLAIMED IS:

1. An apparatus for communicating packets in a network environment, comprising:

5 a network element operable to receive a packet and to identify a sequence number included in the packet that correlates to awareness information associated with one or more adjacent network elements, wherein the network element is operable to update a table included therein in order to account for the awareness information included  
10 within the packet that has not been accounted for by the network element, and wherein the network element is operable to ignore the packet in cases where the awareness information included in the packet has already been accounted for.

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2. The apparatus of Claim 1, wherein the network element includes a transmitter state operable to build and to communicate the packet to a selected one or more of the adjacent network elements.

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3. The apparatus of Claim 1, wherein the network element further comprises a receiver state operable to receive the packet and to determine whether the awareness information within the packet has been accounted for.

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4. The apparatus of Claim 1, wherein the packet is a Hello packet that includes the sequence number in its corresponding header.

5        5.    The apparatus of Claim 1, wherein the packet  
includes a fragment value operable to indicate whether  
the packet is a fragment to be included with other  
fragments in order to comprise an entire packet that  
includes awareness information.

10       6.    The apparatus of Claim 1, wherein the network  
element includes a fragment timer operable to provide a  
time interval in which fragments are to be received at a  
selected location in a network.

15       7.    The apparatus of Claim 1, wherein the network  
element is operable to query a selected one of the  
adjacent network elements in order to receive missing  
awareness information, and wherein an absence of the  
missing awareness information is reflected by the  
sequence number.

20       8.    The apparatus of Claim 1, wherein the packet  
includes a checksum operable to provide an error  
detection function for the packet at receiving and  
transmission locations associated with a selected one or  
more of the network elements.

9. A method for communicating packets in a network environment, comprising:

receiving a packet at a network element;

identifying a sequence number included in the packet  
5 that correlates to awareness information associated with one or more adjacent network elements;

updating a table included in the network element in order to account for the awareness information included within the packet that has not been accounted for by the  
10 network element; and

ignoring the packet in cases where the awareness information included in the packet has already been accounted for.

15 10. The method of Claim 9, further comprising:

building and communicating the packet to a selected one or more of the adjacent network elements.

11. The method of Claim 9, wherein the packet is a  
20 Hello packet that includes the sequence number in its corresponding header.

12. The method of Claim 9, wherein the packet includes a fragment value operable to indicate whether  
25 the packet is a fragment to be included with other fragments in order to comprise an entire packet that includes awareness information.

13. The method of Claim 9, further comprising:

30 providing a time interval in which fragments are to be received at a selected location in a network, wherein the fragments comprise a Hello packet that includes the awareness information.

14. The method of Claim 9, further comprising:

querying a selected one of the adjacent network  
elements in order to receive missing awareness  
information, wherein an absence of the missing awareness  
5 information is reflected by the sequence number.

15. The method of Claim 9, further comprising:

providing an error detection function for the packet  
at receiving and transmission locations associated with a  
10 selected one or more of the network elements.

16. A system for communicating packets in a network environment, comprising:

means for receiving a packet at a network element;

5 means for identifying a sequence number included in the packet that correlates to awareness information associated with one or more adjacent network elements;

means for updating a table included in the network element in order to account for the awareness information included within the packet that has not been accounted  
10 for by the network element; and

means for ignoring the packet in cases where the awareness information included in the packet has already been accounted for.

15 17. The system of Claim 16, further comprising:

means for building and communicating the packet to a selected one or more of the adjacent network elements.

18. The system of Claim 16, wherein the packet is a  
20 Hello packet that includes the sequence number in its corresponding header.

19. The system of Claim 16, wherein the packet includes a fragment value operable to indicate whether  
25 the packet is a fragment to be included with other fragments in order to comprise an entire packet that includes awareness information.

20. The system of Claim 16, further comprising:

30 means for providing a time interval in which fragments are to be received at a selected location in a network, wherein the fragments comprise a Hello packet that includes the awareness information.

21. The system of Claim 16, further comprising:  
means for querying a selected one of the adjacent  
network elements in order to receive missing awareness  
information, wherein an absence of the missing awareness  
5 information is reflected by the sequence number.

22. The system of Claim 16, further comprising:  
means for providing an error detection function for  
the packet at receiving and transmission locations  
10 associated with a selected one or more of the network  
elements.

23. Software for communicating packets in a network environment, the software being embodied in a computer readable medium and comprising code such that when executed is operable to:

- 5       receive a packet at a network element;  
          identify a sequence number included in the packet that correlates to awareness information associated with one or more adjacent network elements;  
          update a table included in the network element in  
10       order to account for the awareness information included within the packet that has not been accounted for by the network element; and  
          ignore the packet in cases where the awareness information included in the packet has already been  
15       accounted for.

24. The computer readable medium of Claim 23, wherein the code is further operable to:

- 20       build and communicate the packet to a selected one or more of the adjacent network elements.

25. The computer readable medium of Claim 23, wherein the packet is a Hello packet that includes the sequence number in its corresponding header.

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26. The computer readable medium of Claim 23, wherein the code is further operable to:

- 30       provide a time interval in which fragments are to be received at a selected location in a network, wherein the fragments comprise a Hello packet that includes the awareness information.

27. The computer readable medium of Claim 23,  
wherein the code is further operable to:

query a selected one of the adjacent network  
elements in order to receive missing awareness  
5 information, wherein an absence of the missing awareness  
information is reflected by the sequence number.

28. The computer readable medium of Claim 23,  
wherein the code is further operable to:

10 provide an error detection function for the packet  
at receiving and transmission locations associated with a  
selected one or more of the network elements.